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RECENT ADVANCES IN OPTICAL SPECTROSCOPY USING HIGH
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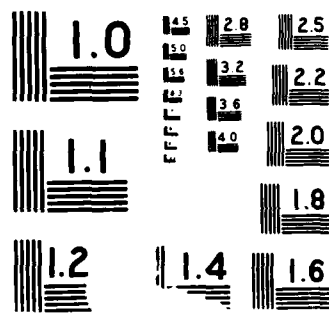
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Using High Performance Array Detectors

by

M.B. Denton, R.B. Bilhorn, P.M. Epperson, and J.V. Sweedler

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USING HIGH PERFORMANCE ARRAY DETECTORS

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ABSTRACT

The operational characteristics of several new solid state array detectors investigated in our laboratories have shown themselves to be highly suitable for application in analytical spectroscopy. The devices investigated to date are selected charge coupled devices (CCDs) and charge injection devices (CIDs), each of which has certain unique capabilities which can be exploited for solving a variety of spectroscopic problems. Readout speed considerations when using sequential, pseudo-random, random, binning, and rapid scanning readout modes will be discussed. Optoelectronic characteristics of these devices including dynamic range, quantum efficiency, noise, resistance to blooming and lag will be contrasted to photodiode arrays, vidicons, and photomultiplier tubes.

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